

MEMORY

HOW TO MAKE AND KEEP
IT GOOD.

BY

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PREFACE.

I have had occasion, in the ensuing pages, to speak very emphatically of the need of vigorous Health, and also of an effective Will, in those who would make the most of their memories, that is, of their minds. Space would not permit me to go into these matters as fully as I should have liked in this Essay, but it is my intention, should my health be spared to follow this work at an early date with one on each of the subjects named.

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MEMORY

IMPORTANCE OF MEMORY

THERE are very few things so important in every day life as the possession of a good memory, and hardly any price is too high to pay for the acquisition of one. Thus anyone who has been bothered by a poor memory, will readily admit. Indeed, it may be said with truth that one of the most prolific sources of failure in life is the not enjoying the advantages of a retentive memory. How necessary it is therefore that all should take the means to secure as good a memory as possible while the brain is still vigorous, for on vigour of brain depends tenacity of memory. It is not to the professional man only that a good memory is needful but to all. A man in the humble position of a messenger once told me that as a youth he lost a situation because he could not remember the names of streets.

He was out of work for some time in consequence, but the lesson he had had was not lost on him. For, walking about from morning till night, he learned the name, position, and character of every street in Manchester, and when at the end of three months he saw that his late employer was advertising for a messenger he went and asked for the

place, saying that he could now remember the names of streets. He was taken on and when he recounted the fact, he had held the position for over twenty years.

It may not be possible for everyone to cultivate a superb memory, for, as I shall show, such things come largely by nature. But there are very few who could not, if they would take the trouble, improve their memory fifty or a hundred fold, and it is open to everybody, except those who are mentally deficient, very considerably to augment their powers of retention and recollection. In fact, there is hardly any limit to the possibility of culture in this respect, provided we have the will to work, and that system and knowledge be turned to the best account in the effort made.

The weak point with most people in trying to improve their memories is that they do not base their efforts on solid knowledge. To make this clear, we must understand first of all what memory is. The majority of people speak of and regard it as a special faculty, in this respect following the metaphysicians, whereas there are as many kinds of memory as there are distinct powers of the mind. This is the phrenological theory, which, though long discredited, is now gradually becoming the accepted doctrine in psychology.

DIFFERENT KINDS OF MEMORY

M. Ribot the distinguished French scientist for instance, in his essay on the "Diseases of

Memory," speaks of memory not as a separate "faculty of the mind," but, adopting the theory of Dr Gall, "the first (as he acknowledges) to protest against this view," accepts with him the unassailable fact that each faculty has its own special memory. Thus he denies "the existence of memory as an independent function," and in this respect is quite in accord with the principles of phrenology as well as with sound psychology. The two propositions which M. Ribot lays down, and upon which his whole theory of memory is based, are fundamentally correct, and should be borne constantly in mind in all considerations having relation to memory.

- 1 Every recollection has its seat in a definite and determinate portion of the encephalon (i.e., the brain),

- 2 The encephalon and the cerebral hemispheres are made up of a certain number of totally differentiated organs, each having its special function to perform, while remaining in the most intimate relation with its fellows

The plain English of this is, that each faculty of the mind does its own remembering, and its retentiveness of impressions depends *cæteris paribus*, on the size and activity of the organ through which it is manifested. Thus a large organ or faculty of cautiousness gives a good memory of dangers past, large appetite, a good memory of gustatory pleasures, large benevolence, a good memory of beneficences done, ideality, a vivid recollection of

objects or scenes that have struck the æsthetic sense, and so on with the other mental powers

One man will remember the road to a place, though it be long and tortuous, after once traversing it, while another will be for ever losing himself if he try to find his way alone. But the same person who recollects every turn and bend, every bush, tree, and house, each hill and slope encountered in a long journey, may not be able to carry accurately a message of six words, or to remember the colour of the coach he passed, while the man who is constantly losing his way may be able not only to tell the colour of a dozen coaches he meets, but the hues of the clothes of the passengers upon them, the names of all the inns he passed, and perhaps every word of the patter of a cheap-jack to whom he may have stopped to listen by the way

It is only on the ground of the diversity of faculty that we can account for the different form memory assumes in different individuals. Thus, taking the intellectual powers we find that one person may have a good memory in two or three respects, but a poor or indifferent one in others. In some respects it is well that such should be the case, because it is in this way that special talents arise

Southey serves as a good instance in point. Mr Edward Dowden tells us in his life of the poet that he was intended for the law, and that, "although he pleaded at times against his intended profes

sion, he really made a strenuous effort to overcome his repugnance to legal studies, and for a while Blackstone and *Mador* seemed to advance side by side. But the bent of his nature was strong 'I commit wilful murder to my own intellect,' he writes two years later, 'by drudging at law' And the worst or the best of it was that all his drudgery was useless Southey's memory was of that serviceable sieve-like kind which retains everything needful to its possessor, and drops everything that is mere incumbrance Every circumstance in the remotest degree connected with the seminary of magicians in Dom Daniel under the roots of the sea adhered to his memory, but how to proceed in the Court of Common Pleas was always just for gotten since yesterday "

Southey's was a wonderful memory for things in which he was interested, but he had no interest in law, and it would not stick Does not this show how important a knowledge of character, generally dependent on the largest organs, is in the choice of a profession? Much of the misery in life, at least all that part dependent on the want of success, proceeds from persons with one good set of faculties being put to professions or callings requiring a different set It has been my good fortune to be able in more than one instance to put people right in this respect who had been unfortunate enough to start wrong, and also to set boys and girls on the right path who were about being launched upon a career which would have

ended in failure—and this through having given a careful study to phrenology

SURPRISING FEATS OF MEMORY.

It is rare to meet with a memory that is good in all particulars. One person remembers faces, the forms of things, proportions, etc., while another has the greatest difficulty in recognising an individual but recently introduced, and there are persons who never perceive the likeness in a portrait, and do not even know their own faces if they chance to see it by accident in a mirror.

A defective memory in this respect arises from a lack of the phrenological organs of form and size. With these organs large and fairly well trained, the most surprising results may be obtained. Some years ago, for instance, at the Fifth Avenue Hotel in New York, there was an attendant who took charge of the hats of gentlemen who went in to dine. Sometimes he had as many as five hundred hats in his charge at once. Most of them belonged to persons whom he had never seen before, yet without a moment's hesitation he would give every gentleman his hat when required. The man explained his ability to do this by saying that he formed a mental picture of the owner's face inside his hat, and that, on looking at the hat again, the wearer's face was instantly brought before his mind's eye.

Another man, who was still more remarkable in his respect, used to hold a similar position in the

Metropolitan Hotel, New York "He was," says the New York paper from which I quote, "a very genteel and intelligent looking coloured man of middle age, who stood in the hall near the dining room door. He was the wonder particularly of many Westerners who were then in the habit of stopping at this house when in New York, and his doings were one of the things that they talked about on their return home. More than once did they conspire to defeat or puzzle him by a large number hurriedly crowding into the dining room together, and at the same time thrusting at him their hats, many of which were designedly new and as nearly alike as possible. But whether the conspirators came from the dining room together, as they went in, or in smaller groups, or singly, the ready and self possessed master of the hats promptly, courteously, and unerringly handed each one to its owner, whose face he now saw for the second time." These were undoubtedly unusual feats of memory, but not necessarily feats of a remarkable memory. They were more the result of training than of extraordinary natural powers.

But although persons like the above may show extraordinary memory in matters depending upon the organs of form and size, it is possible for them to be very defective in other matters. A person might have an inferior memory so far as form and size are concerned and yet be able perfectly well to remember events, anecdotes, and history generally, or to recall thoughts and ideas, the

advanced period of life. For instance, we are told that Lord Macaulay was able to repeat the whole of "Paradise Lost" and the "Pilgrim's Progress", but in this case other faculties were brought into play besides verbal memory. To the majority of people, such a feat would be quite impossible, and yet they might have exceedingly retentive minds in other subjects, for instance, of matters relating to their own experience, of events in history, of machinery, of objects in nature, and so forth.

MEMORY A WONDERFUL POWER

When we come to analyse memory in this way, we begin to understand what a wondrous power it is. Let us try to estimate the number of impressions that an ordinary individual—say even a person with a "poor memory"—can, and does, ordinarily retain in his mind, and the result is almost astounding. First, there comes his own experience, including thousands on thousands of single events, then the lives of maybe hundreds of persons, his relatives and friends, then the impressions of hundreds of places he has visited, and in each place hundreds, even thousands of details, then the various aspects of nature, the forms, colours, sizes, seasons, qualities, etc., of natural objects, then the results of education and study, the details of business, possibly the minutiae of a handicraft, besides the thousands on thousands of heterogeneous facts, thoughts, impressions, and imaginations that crowd themselves

upon the mind from day to day and from year to year—and all these are impressed in some mysterious, inscrutable way upon the tablet of the brain, stowed away, hidden from view, forgotten as it were until the moment that they are wanted, when they shine forth like phosphorescent writing in a dark chamber

Well has the mind been likened to a nest of pigeon holes, each filled with notes and memoranda, carefully lying away until they shall be wanted, the pigeon holes being the different faculties of the mind, each having its store of impressions to remember, each doing its work according to its size and power, and each, moreover, acting independently of the others, albeit all, or most of them, having a sympathetic, and even a physiological connection one with another

DISEASES OF MEMORY

That this is no mere imaginative idea is shown by the fact that the memory may be lost in regard to some things, yet retained in full strength in regard to others. Disease may impair one faculty and leave the rest intact. It is perfectly well known to physiologists that a diseased state of, or injury to, a certain part of the frontal lobe, known to phrenologists as the organ of language, and to physiologists as the centre for speech, causes a loss of memory of words—sometimes of the spoken word, sometimes of the written. The person so afflicted can quite well understand what is said to

him, but cannot put his thoughts into words. A curious instance of the kind was not long ago reported in the French newspapers.

"A painter, who was visiting a friend at Sceaux, was standing on a balcony on the second floor, when he overbalanced himself and fell to the ground. Everyone rushed downstairs, expecting to find him dead, but he quickly picked himself up and seemed unhurt. When, however, he turned to address his friends, he could not remember their names. He had forgotten his own, and, to his utter astonishment, he also found that he could not recall a single substantive. He can pronounce, one after the other, the letters of which the names of his wife and daughter are composed, but he is unable to unite them into one word."

A still more striking instance of the partial loss of memory is the following. It is recorded in a letter written by a Mr A. T. Ormond, of Pennsylvania, to the *New York Weekly Tribune*, and has reference to the uncle of the writer, the Rev. Marcus Ormond, a minister in the United Presbyterian Church, and a man of considerable scholastic attainments. In the spring of 1878 he was stricken with paralysis of the brain, brought on by the shock to his system, consequent on returning from a lecturing tour to find his house burnt down and his family homeless. For a time he was quite unconscious, but gradually "struggled back into dreamy consciousness." Speaking of himself he says "My memory was not a blank, on the con

trary, in many respects it was as strong as ever; but there were large blank tracts in it. I knew my family well enough, but could not name them, and when their names were repeated to me I could not retain them, but would either forget them altogether or get them mixed up—calling Jennie, Maggie, or Minnie, Flora. Even yet I have some difficulty to get their names right." At first he could neither talk, read, nor write, and had to go over the ground of learning again like a child.

His nephew, summing up his state of mind, says —

"He had lost all he had acquired by what is technically called study, but, on the contrary, retains all, or most of what he had acquired, by the general exercise of his faculties. He knows and recognises most of the persons and places with which he has been acquainted, and is perfectly cognisant of all the leading events of his past life. I know from personal observation that his memory is as sound in this respect as it was before his illness. The link that binds the past to the present appears to be as bright and strong as ever. There is no absolute break in his consciousness, but a large segment of it seems to have dropped out entirely. How a man can thus lose the fruits of the special cultivation of his faculties while he retains the fruits of their general culture intact is a question for both philosophers and physiologists. It is worthy of note in this

connection that while my uncle's memory for persons and places is good, he is generally unable without much difficulty to recall their names. When the name is suggested he recognises it, however, and after a few trials succeeds in remembering it. He encounters a verbal difficulty of the same character in repeating anything by rote. He says 'I can ask a blessing before meal if I limit myself to a short form with which I am very familiar. But if by chance I get a single word wrong or out of place I break down. My memory is unable to leap the chasm made by the disarrangement or omission of a single word. My only remedy in such cases is to start again at the beginning.' His difficulty here is evidently weakness in power of verbal association. In fact, the linguistic faculty appears to be, the seat of the trouble, for while his power over oral and written language has been in a great measure destroyed, he still retains his ability to compute numbers. He can perform all the numerical operations involved in an ordinary business transaction, but whether he would be equal to the task of solving a complex problem I cannot say, but rather think not. The strain of prolonged attention required would, perhaps, be too heavy a task for his powers. For some months after his illness his counting faculty was of little use to him, for he had lost all conception of the value of money. But one day in Pittsburg it all flashed suddenly into his mind, and from that

time forward he was as capable of transacting business as he had ever been '

MEMORY DEPENDENT ON HEALTH

A cure like the above is very instructive, and shows how much memory is dependent upon the general health. Indeed, we may say that the first condition of a good memory is health. Without a healthy condition of the system, and especially of the digestive apparatus, the organs of the brain on which memory depends may fail to obtain sufficient nutrition, and so lose the necessary strength for their work just as a limb may.

It is their general condition of superb health which explains the ease with which many children commit to memory. There is, of course, a great difference betwixt children in this respect, to be accounted for only on parental and pre-natal conditions. For, just as there is such a thing as an inherited constitution and inherited talents, so there may be inherited memory.

In other words, certain organs or faculties of the mind that are strong or specially active in the parents will generally be transmitted to offspring. Moreover, as debility is often transmitted to offspring, and debility is a frequent cause of poor or imperfect memory, such conditions have to be taken into account in all efforts to improve and strengthen the memory.

NO LIMIT TO CULTIVATION

A man therefore who finds his memory bad and desires to improve it should first of all look to his general health. It forms no part of this essay to say how that should be done. But, given a healthy brain and a generally robust constitution, making work no trouble, and there is practically no limit to the cultivation and utilisation of memory. If any man doubt the truth of that statement let him consider this fact, that the *Iliad* of Homer, containing 15,677 lines, was at first treasured in men's memories. The fact is one well attested by generations of men of the olden times. Yet this great effort of cultured memory pales into insignificance beside others which may be mentioned.

The *Rig Veda* (one of the sacred books of the East), with its 1,017 hymns, contains an amount of matter for the memory to retain, four times the length of the *Iliad*, yet this has been safely committed to memory, and with such perfection that any line could be called out for recitation as occasion required. For more than 3,000 years the whole of the Vedic literature was thus transmitted from generation to generation by word of mouth, that is, it was treasured up in the memory alone.

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mission is most faithfully and sacredly accurate. Nay, so great is the belief in the oral transmission of the sacred books of India, that, although writing has been known for more than 2,500 years, yet the custodians of the Vedic traditions have never trusted to it, but prefer to rely on the transmission of their sacred knowledge to traditional memory *Mirabile dictu!*

Though the priests have now manuscripts, and even a printed text, yet, says Max Muller, "they do not learn their sacred lore from them, but learn it, as their ancestors learned it thousands of years ago, from the lips of their teachers, in order that the Vedic succession should never be broken" "For eight years, in their youth, they are entirely occupied in learning this. They learn a few lines every day, repeat them for hours, so that the whole house resounds with the noise, and they thus strengthen their memory to that degree that, when their apprenticeship is finished, you can open them, like a book, and find any passage you like, any word, any accent."

The Talmud, in the Rabbinical schools, was gradually mastered in the same way. 'All that vast literature,' exceeding many times in bulk Homer, the Vedas, and the Bible itself, all put together, was, until very lately the work and growth of oral tradition.

The Talmud, a sacred Bible, was thus transmitted from age to age, although in prose, which is more difficult to remember than poetry, yet its con-

tents were safely carried down by oral tradition, century after century, with unerring exactness. This ancient memorising continued to be practised in the Oriental schools long after the sacred books had been committed to writing.

Dr Gotthel, of New York, had a man in his study who knew the entire Talmud by heart, and could take up any word that was given him and go on repeating, word after word, with absolute correctness, for any length of time. From this it is evident that constant and incessant repetition is the soul of memory. It is the golden zone around the waist of Mnemosyne with which, as a talisman, she can thread her way through the mazes of any dance, on any floor, of art or of science. The ancient priests knew the principle of iteration well, and acted up to it in full faith, or rather belief, feeling sure of accomplishing the marvellous feats of memory we read of.

Need we doubt that what could be done in olden times is equally practicable now? At the present time, however, we have no need to carry whole books in the memory. What we require is the possession of a memory sufficiently versatile to serve the purposes of a complex and multifarious life. Whether a man be in business or in a profession, whether he have to do with science, history, or literature with figures, with commerical details, or with agricultural matters, he wants a memory that can always be trusted, and that will never play him false.

MEMORY OBTAINABLE BY WORK

The question is how is he to obtain such a memory? Well, there is only one way to do it, and that is by work. Now and again we may find a man who was born with so extraordinary a memory that he becomes a sort of show piece, like a man named M Cartney who died some few years ago in America. He could go back for forty or more years and tell what he had eaten for his meals on any day in all those years. He was able to recall also what the weather was on any day during the whole of the same long period. Possibly such a memory might have been made useful, but in the case of M Cartney it does not appear to have been rendered so, although in addition to his power of recollecting meals, he seems to have had an exceptional gift for figures. Better to have a well-organised brain, capable of being trained to useful work, than such a gift.

CAUSES OF BAD MEMORY

The first thing to be done in setting about improving the memory is to leave off doing the things that tend to injure the mind in that respect. Many a man's memory is bad because he has not treated it fairly. He has never given it a proper chance. When he reads, he gallops over the pages, giving the subject he is reading about very little attention, and then he is surprised that his memory is not retentive. There are two ways in which such a person may improve his memory

One is to read only about a subject in which he is strongly interested, the other is not to read only, but to think. When you have read a paragraph or a page, stop and not merely recall what you have read vaguely in your mind, but put the thoughts expressed into words in your own way. If the thoughts are weighty, write them. By doing so, you gradually form a habit of attention, and a good memory—and what is more, knowledge—is the result.

Besides inattentive reading, there are other things injurious to memory. One is the habit of skimming over newspapers, all in a confused jumble, never to be thought of again, thus diligently cultivating a habit of careless reading hard to break. Another is the reading of trashy novels. Nothing is so fatal to reading with profit as the habit of running through story after story and forgetting them as soon as read. Many persons whom I have known have sadly confessed that their minds were ruined by such reading.

We often hear it said that the reading of novels may be made a means of education, and doubtless such may be the case, but it is greatly to be feared that at the present time a vast deal more harm than good is being done by indiscriminate novel reading. The occasional perusal of wholesome stories may be useful and recreative, but the habit as it at present exists in England is almost as injurious as dram-drinking, leading,

could not be a better instance of this than Sir Walter Scott. Scott's interest in the past amounted to an intense love, so great as to impress all he learned with respect to it *indelibly* upon his memory. His early life, we know, was spent in poking into whatever had upon it the rime of age. Wherever a building was old and noted, he believed all the stories connected with it, and he never forgot them; so that when he came long after to write his world-famed novels and romances he had all the material at command, he had no occasion to read up or to refer, his material was all spun out of the then existing state of his own mind, whatever had been consecrated by time and situation, whatever there was of antiquated custom, was then ready to hand, with an intuitive knowledge of human nature whereon to hang it. This it was that enabled him to write so rapidly. Scott had much larger veneration than common, and with less talent, and under other conditions, it might have shown itself only in abuse, or in a senseless love of the past, but he turned the stream of departed time over the whole world, to its great delight and improvement.

The moral region of the brain generally was also very large in Scott. No one perhaps has given so much pleasure, and there is no one in the past that we can love so well, and upon whose character, as exhibited in Lockhart's life of him and elsewhere, we delight so much to

dwell His was certainly, however, a singular head and a singular character

The moral of Scott's career is this you must hang what you want to remember on your strongest faculties, upon those things you love best, or in which you take most interest, and if one intellectual faculty is small, give it the aid when you can of a larger one. Some people can remember best by associating events with large individuality (*i.e.*, minute knowledge of things), while others, with large causality, connect them with that, and reason up to them from cause to effect By such means a defective memory may be much strengthened

ASSOCIATION

This power of association is a very potent influence in regard to the strengthening of the memory, and no one can make the most of the gifts he has until he has learned to turn it to good account To describe it briefly, association is the power of bringing other faculties to the aid of one that is weak, and by that means enabling it to do its recollecting with more thoroughness It may be very effectively used for the memorising of names For instance, say you want to remember the name Bairut, a town in Syria It is not easy for everybody offhand to recall such a name, but suppose you say to yourself, Bairut is not on one of the highways of Syria, but may be said to be on a byroad

So you associate Bairut with the word 'by road' or 'by way,' and whenever you want to recall the name you think of a by way, and it at once occurs to you.

For a long time it used to be difficult for me to remember the name of the capital of China. But reading once in a book of travels that Peking was pronounced by the natives as if spelled 'Pechin,' and that thence arose the term 'Pechin' or 'pigeon English' for the broken English spoken by the people of that city, I came to associate the Celestial capital with a pigeon, and by that means found no more difficulty in recalling the name Peking.

The ways in which association can be thus utilised are endless. They may sometimes be very absurd, but frequently the very absurdity of the idea employed helps the end. You want to recollect Tibet, the little-known country in Central Asia, you find it difficult to do so, but having a cousin familiarly called Tibby, you associate the country with her, and no sooner do you think of her than the name Tibet jumps to your tongue. So you may desire to remember the name Strudwick. It is not an easy one to recollect, but you have a friend named Wicks, so you think of her name, and immediately the other comes to your mind.

MEMORY PEGS

A student wanted some sort of a familiar peg

on which to hang the Himalaya Mountains, which he found it difficult to recollect, so he thought of 'hymn' "We sing them on Sundays," he would say when he wanted to remember the name of the great Asian range, and at once it would be on his tongue

The same youth, whose memory for proper names was not very quick, devised for himself a most elaborate method of association whereby he helped his natural powers of recollection. He used to say that there was not a single thing in or about his home which he had not used as a peg whereon to hang something he wished to remember. "If dad and mother knew what a host of memories they are made to carry for me they would sink under the burden," he would say, with a laugh

Even his little sister, who was a chatterbox, was made to serve his mnemonical ends. Because she was such a 'talker,' he made her stand for 'Tokio,' the capital of Japan, and in a similar way he made the gardener's Irish wife stand for Nagasaki, because she was such a 'nagger'. The same woman's birdcage served as a memoriser for Canada, for the Canary Islands, for Candia, for Canvy Island, for Canton, and a number of other places, because it gave the first syllable of the names or words he wished to recollect.

ARTIFICIAL MEMORY.

In having recourse to such aids the youth here

referred to was—unconsciously it may be—employing a very ancient method of artificial memory known as topical mnemonics (Gr *topos*, place). This method was in very general use among the Greeks and Romans, and is referred to by both Plato and Aristotle. Its invention was attributed to Simonidas the Greek poet, who was noted for his great memory. By this topical method a speaker could memorise in order the facts, arguments, and illustrations of a public address, or it could be employed to recall in succession the ideas and images of a poem or narrative.

The way it is done is this. Say a preacher wants to commit a sermon to memory. He selects a house with which he is so familiar as to remember well the position not only of each room, passage, or corridor, but all the prominent objects in every room, and then associates the exordium of his discourse with the entrance hall, systematically assigning thought after thought to the chief objects there visible. Then the first main division of his sermon may be identified with the dining-room, every piece of furniture, every picture, the windows and door even, being utilised for recalling the succession of facts, arguments and illustrations he wishes to use.

The second main division of the subject may next be associated in like manner with the drawing-room and the various articles in it, and so with the other rooms, and what they contain, until the whole subject is disposed of. The

principle is, of course, that to recall a series of ideas, they can be associated more easily with familiar objects and spaces than with each other

IMAGINATION AS AN AID

Another form of topical mnemotechny was based on imagination. An imaginary house was built containing a certain number of rooms, and each room was divided into a certain number of spaces. With each space a certain object was associated, as a tree, an animal, a bird, and so on. When these rooms and objects were thoroughly known, so as to be recalled with perfect ease and accuracy, then the person who has a series of things he wishes to remember, assigns them to a particular room and compels himself to detect some association, no matter how incongruous, between each of them and one of the objects which is to serve as memory pegs.

The method seems at first sight absurdly cumbersome, but the fact that it was used so extensively in olden times (and indeed is yet in a modified form) is proof sufficient of its practical value. For instance, if it were desired to fix an historical date in the memory, it was localised in an imaginary town divided into a certain number of districts, each with ten houses, each house with ten rooms, and every room with one hundred squares or memory places, equally divided between the walls and the ceiling. Then, if it were desired to fix in the memory the date of

the discovery of gunpowder (1320), an imaginary cannon, or some other implement connected with the use of gunpowder, would be placed in the 20th square or memory place of the 3rd room of the first house in the historical district of the town

Many persons who have been noted for their excellent memories have made use of mnemonical aids similar to the above. But the best method of 'artificial memory' is useless unless there be one or more faculties whose strength can be turned to account in the process.

Thus, where there is a powerful imagination, that may be turned to good advantage in helping the memory. Take geography, for instance. The basis of sound geographical knowledge is the recollection of maps. But to remember all the details of a map is a very difficult performance, unless the matter be taken in hand in a most systematic manner

MEMORISING GEOGRAPHY

The best way to set about learning the geography of a country is first of all to draw an accurate outline of that country, putting in with care the lines of latitude and longitude. The map thus made should then be placed on a wall where the eye can rest on it from time to time. By this means the eye should be so accustomed to the outline that it can be called up in imagination at any moment.

When this can be done with ease, we may proceed a step further and draw into the outline map the course of the chief rivers. Thereto, after a while, may be added the mountain ranges. When the map has reached this stage it is well to prepare two diagrams to accompany it. On one will be drawn lines to represent the relative length of the rivers, upon the other pyramids representing the heights of the mountains. These should of course be accompanied by the names of each, and should be fixed on the memory like the outline map, that is, visually, until they can be reproduced at will. The next step of course will be to add the length and height of the rivers and mountains respectively, and so make them a mnemonical possession for use when required.

The cities and towns, the islands and lakes, the provinces and so forth may all be learned in the same way. Some persons will find it best to make separate outline maps for the provinces and cities, and even for the rivers and mountains, each reproducible at will before the mind's eye, or upon the dark screen upon which we look when the eye is closed. But whether that is done or not, the process of acquisition should be gone through step by step so as to avoid any sense of crowding or confusion.

VISUAL AND AUDITORY MEMORY

It may be added here that while very many

which I have built up, almost insensibly, for my own use. The chief feature in this method is what I may call a long post and rail fence, the space between the posts representing ten years, and each year being represented by a rail. The centuries are divided by larger posts, each distinguished by a different colour.

It may be described as a huge diagram visible to the eye of the mind, one end of it stretching away back to the ninth century, the other coming forward to our own time. Over the first conspicuous post, that dividing the ninth from the tenth century, appears the likeness of Alfred the Great, who it will be remembered died in 901. Over the next century post appears the face of Ethelred the Unready, and during the next ensuing space representing ten years is seen a picture calling to mind the massacre of St Brice's Day.

I should say that the post over which King Alfred appears is white, while that associated with Ethelred is red. The colours are in a sense symbolical, white standing for the stainlessness of Alfred's career, and red for the bloodshed with which Ethelred's reign was smirched. Red prevails during the greater part of the eleventh century, but changes to yellow towards the end, the next century post being likewise yellow. There is a reason for this although it need not be gone into here.

Upon the rails representing the ten year spaces

various events are strung and one need only look at the number of the space in its century and mark which rail it is on, to get the date of an event. Thus on the second rail of the last decadal division of the fifteenth century appears a ship, and upon its poop stands Columbus taking his first look upon the New World. Putting the century, the decade, and the year together, we get the date 1492.

If we descend five more rails we come to 1497, the date when Sebastian Cabot set sail from Bristol on his voyage of discovery, which resulted in the first landfall made by a European on the American Continent. It may be added that, because this was an era marked by maritime discovery, the post dividing the fifteenth from the sixteenth century is coloured blue. The whole of the sixteenth century takes on the same hue, except the years of Queen Mary, which appear dark and funereal.

As the centuries proceed there is a more and more vivid life visible, represented by pictures and portraits. Thus the decades covered by Elizabeth are seen to be alive with ships. Through the long array of posts and fences the sea is marked and upon it vessels coming and going. Battling, too, and fighting is going on. All this denotes the character of the period, while each event is attached to its proper year. Thus on the last rail of the closing decade of the century appears the words "East India

Company," which signifies that the company was established in the year 1599

It is obvious that one cannot describe here such a method of attacking history in detail. It would take too much space. Moreover, it would serve no good purpose. Different minds are so constituted that any mnemonical method of the kind here described must conform to the peculiarities of each. The general idea, however, and the outline here given may help many to construct a method of their own. I can only say that it has aided me enormously, and I have by its means made visible and tangible to my own mind the whole course of English history from the earliest times to our own day. And this includes not merely the dates and leading events, but to a large extent the very life of the people, which has been filled into the picture by general reading and from the expression of the national life as revealed, period by period, in our literature.

ADVANTAGE OF MNEMONICAL METHODS

One advantage of a method like the one described above is that it affords an enormous aid to systematic reading and study. Thus if, for instance, we are reading a life of Wicliffe, we fit him into our scheme, stretch him, as it were, upon our mnemonical frame, and so, as we read, each event or picture, each note of custom or manners, every peculiarity of speech,

falls into its proper place, and co-ordinates itself to what is already there, the result of previous reading or study

It may be thought that all this must result in confusion, but the fact is just the reverse. Only by some such means can memory be aided and strengthened, and the most possible made of acquired knowledge.

Not every one, of course, can work out and avail himself of such a method. But many will be debarred from trying because of the apparent cumbrousness or hopelessness of the thing. To do so, however, is not wise. What has been done can be done again, and though a completed system may seem a great work, it is a simple matter to make a start. This can be done by imagining a square house divided into four rooms on the ground floor, with a corridor running through the middle. Say there would be a flight of steps leading to the door, then the entrance hall, at the end of which would be the stairs leading up to the second floor.

The hall and staircase, together with the steps to the door, might be used for general matters that are to be remembered, and for this purpose they are furnished with a hatstand, a table, chairs, pictures, and so forth. There will be a barometer, of course, a pair of stag horns, a lamp, some arms, possibly a suit of armour, and a dozen other useful and ornamental articles. The first room on the right may be devoted to

history, the second to geography, the first on the left hand to literature, the second astronomy; or just as the student selects. Each room will be furnished or planned out exactly as he likes and finds most convenient.

STARTING A MEMORY HOUSE.

A student to whom I suggested such a method, instead of proceeding to arrange his interior, simply identified each room with a particular subject, and then left the thing to grow. One room he devoted to botany, and he gradually allocated all the upper part of the walls to leading botanists, to each of whom he gave a square space. As his memory for names was poor, he filled each space with a familiar object, which at once recalled the name or subject he required. For instance, in the space allotted to Linnæus he placed in imagination a hedge with linen hung on it to dry; in that allocated to Henslow he put a hen, and in the one identified with Babington he placed a baby, and so on.

It was some time before this young man began to make use of his rooms, the hall and staircase proving sufficient for his immediate wants. He used to say that the first word that bothered him after he erected his mnemonical house was 'diploma,' which he could never remember. So in imagination he took a 'dip' candle and placed it on the hat stand just within the door, and ever

courage their children to use and cultivate their memories. They should try them in every possible way, so as to find out their capacity. Talents may thus be discovered, and not unlikely a bent given to the mind which may prove of the highest practical importance.

HOW TO MAKE A GREAT MAN

A gentleman used to practise his son's memory *in this way*. He would stop at a shop-window, tell his boy to take a good look at all there was in it, and then walk on. When they had gone a few steps he would ask the lad what he saw in the window. He would answer, "O lots of things!" But he could not name more than one or two.

Another time they would stop at a shop window, and the gentleman would tell his son to take a good look at what was there and remember, so as to be able to describe as many articles as he could. Then, when they had passed on, the lad would recount as much as he could of what he had seen. At first he would be able to name and describe half-a-dozen objects, then a dozen, and so on. Then, without stopping, the father would bid his son look at what was in a window as they passed and see how much he could remember, and, to such perfection was in time the youth's perception and retention trained, that a look in passing a

shop-window, or going through a room, or along a street, would enable him to recollect everything he had seen and describe it minutely. It need hardly be said that the youth afterwards became celebrated.

Robert Houdin, the celebrated conjurer, trained his son in a similar way, and so quick and retentive became the boy's mind that in walking rapidly past a toy shop he would see the whole so accurately that he could write down correctly the position and character of every toy in the window. Entering a gentleman's library on the occasion of a private entertainment, the youth, while his father was making arrangements with the host, in a few minutes noted the name and position of every book on the shelves. During the course of the evening, as an exhibition of "second sight," Houdin astonished everyone by his son's "gift" in being able to detail so accurately the books and other things in the next room—*i.e.*, the library, where they had both been a short time before.

THE NEED OF WILL.

In brief, there is hardly any limit to the power of the memory. Even the poorest of memories may be made to perform marvels. But it requires care, industry, patience, and therewith an indomitable will, to achieve such results. I cannot too often emphasise this need

of a vigorous will. Many a man has excellent intellectual powers, every qualification in fact for success, and even for distinction, but through lack of the early training of the will, scores a failure in the end. It is lamentable that it should be so, especially when there is no need, as in nine cases out of ten there is not. Every one has seen workmen driving nails, and probably marked the different way in which they work. Some will hammer and hammer away, and get their nail in somehow, but another will fix his nail, give it the right direction, and with a clinking blow send it vigorously home. That is the nail that holds. A fact, a date, or a thought, tackled with equal good will, goes home in the same way, and sticks.

SUMMARY.

There is but a line or two to add, and that by way of final summing up. The first thing to be considered in the endeavour to improve the memory is that, although, in a healthy brain, cultivation of the remembering faculty may be carried to almost any extent, yet there is a limit to both time and capacity. We cannot always be learning and committing to memory. Work has to be done, the things we learn have

to be put into practice, and only too often work brings worry, and worry an impairing of the vigour of the brain, and so of its power of recollection.

Hence the need of strict economy in the use of the memory. In reading or study, in all our mental exercises, we should make it a rule to ask ourselves the question: Is this fact, this sentence, this thought worth remembering? The mind will recollect much, as it will forget much, apart from any effort of the will. But there are times when judgment has to be exercised as to what is worth recollecting and what is not. It is then that the exercise of economy is required, and this becomes more and more needful as the years accumulate. A man of middle age is not able to tax his memory as a youth can. But though he may not be able so easily to sit down and learn the grammar by heart, he can still commit thoughts, ideas, trains of reasoning, facts, dates, and such things as he knows will be useful to him either in business or in the exercise of his profession, if he, having decided that such fact, &c., is worth remembering, use the aid or methods he has found best or most convenient to impress what he wishes to remember indelibly upon the mind.

Thus will, judgment, economy, a knowledge of ourselves and our powers—possessions which

only come with years and experience—are the natural aids to memory when that faculty begins to lose something of the freshness and vigour it enjoyed in the heyday of youth; and they cannot too soon or too carefully be brought to bear in the enlargement and strengthening of the powers of recollection

